

CLAIMS

[Claim 1]

A hydraulic antivibration device comprising a first attachment fitting, a second cylindrical attachment fitting, a vibration-isolating base joining the second attachment fitting and the first attachment fitting and composed of a rubber-like elastomer, a diaphragm attached to the second attachment fitting and forming a liquid-filled chamber between the diaphragm and the vibration-isolating base, partitioning means comparting the liquid-filled chamber into a first liquid chamber on the vibration-isolating base side and a second liquid chamber on the diaphragm side, and an orifice formed between an outer peripheral face of the partitioning means and an inner peripheral face of the second attachment fitting and putting the first liquid chamber and the second liquid chamber into communication with each other,

the partitioning means including an elastic partition membrane composed of a rubber-like elastomer and a pair of displacement-regulating members regulating the displacement amount of the elastic partition membrane from both sides thereof, the pair of displacement-regulating members having respectively openings;

which device is characterized in that

the openings consist of a first opening defined on a radially central side of each of the displacement-regulating members and a plurality of second openings defined around the first opening in a distributed manner;

the elastic partition membrane includes a thick-walled portion on a radially central side thereof located within the first openings when viewed in an axis center direction thereof, a thin-walled portion located radially outwardly of the thick-walled portion and formed to be thinner than the thick-walled portion thereby being located to be spaced apart from the pair of the displacement-regulating members, a stationary portion situated in a peripheral marginal area of the thin-walled portion and pinched and fixed between the pair of the displacement-regulating members radially outwards of the second openings, first ribs situated, on the one face side of the thin-walled portion, around the thick-walled portion in a distributed manner and formed integrally with a boundary between the thick-walled portion and the thin-walled portion in a spaced relation to the one of the pair of the displacement-regulating members, and second ribs situated on the other face side of the thin-walled portion around the thick-walled portion in a distributed manner and formed integrally with the boundary between the thick-walled portion and the thin-walled portion in a spaced relation to the other of the pair of the displacement-regulating members;

the first attachment fitting is constructed as a body frame side coupling means to be coupled to the body frame side and the second attachment fitting is constructed as a vibration generator side coupling means to be coupled to the vibration generator side, and thereby, part of a vibration transmitting path from the partitioning means to the body frame is constituted by the vibration-isolating base.

[Claim 2]

The hydraulic antivibration device as set forth in claim 1, which is characterized in that the first and the second ribs are disposed, when viewed in the axis center direction of the elastic partition membrane, in a radial fashion relative to the axis center and equidistantly in the circumferential direction.

[Claim 3]

The hydraulic antivibration device as set forth in claim 1 or 2, which is characterized in that the first and the second ribs have respective top portions on their opposing faces to the pair of the displacement-regulating members in a projecting manner and the top portions are set in such a height dimension that upon assembling of the partitioning means, the top portions may be situated in a spaced relation to the pair of the displacement-regulating members.

[Claim 4]

The hydraulic antivibration device as set forth in claim 1 or 2, which is characterized in that the first and the second ribs have respective top portions on their opposing faces to the pair of the displacement-regulating members in a projecting manner and the top portions are set in such a height dimension that upon assembling of the partitioning means, the top portions may abut on the pair of the displacement-regulating members.

[Claim 5]

The hydraulic antivibration device as set forth in any one of claims 1 to 4, which is characterized in that on at least one face side of the thin-walled portion, auxiliary ribs are formed in a residual space of a space where the first or the second ribs are formed, and the auxiliary ribs are constructed to be lower in rib height and narrower in rib width than at least the first or the second ribs.

[Claim 6]

A hydraulic antivibration assembly containing the hydraulic antivibration device as set forth in any one of claims 1 to 5 and a vibration generator side bracket coupling the hydraulic antivibration device to the vibration generator side bracket, which assembly is characterized in that the second attachment fitting includes a small-diameter cylinder portion, a large-diameter cylinder portion formed to be larger in diameter than the small-diameter cylinder portion, and a step portion linking the large-diameter cylinder portion and the small-diameter cylinder portion, the large-diameter cylinder portion being internally press-fitted in the inner periphery of the vibration generator side bracket; the vibration generator side bracket is formed on its inner periphery with an abutment portion protruding radially inwardly that is capable of abutting on the step portion of the second attachment fitting internally press-fitted in the inner periphery.

[Claim 7]

The hydraulic antivibration assembly as set forth in claim 6, which is characterized in that the

second attachment fitting is constructed so that the large-diameter cylinder portion may be situated on the first attachment fitting side than the small-diameter attachment fitting, and internally press-fitted in the inner periphery of the vibration generator side bracket, and that the step portion of the second attachment fitting in the internally press-fitted state may be situated on the first attachment fitting side than the abutment portion of the vibration generator side bracket.